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Bill Sheffield, Governor



AGE, SEX, AND SIZE COMPOSITION OF PACIFIC HERRING,
Clupea harengus pallasi, FROM EASTERN BERING SEA
COASTAL SPAWNING SITES, ALASKA, 1983

By:
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and
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January 1984

ALASKA DEPARTMENT OF FISH AND GAME
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Don W. Collinsworth
Commissioner

ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

The primary purpose of these reports is presentation of data. Description of programs and data collection methods is included only to the extent required for interpretation of the data. Analysis is generally limited to that necessary for clarification of data collection methods and interpretation of the basic data. No attempt is made in these reports to present analysis of the data relative to its ultimate or intended use.

Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revisions will be made via errata sheets. Major revisions will be made in the form of revised reports.

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Anchorage, Alaska

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ABSTRACT

Pacific herring, *Clupea harengus pallasi*, were sampled in five eastern Bering Sea commercial fishing districts and Nelson Island, the major subsistence fishing area during the spring spawning migration in 1983. Samples were taken from commercial purse seine and gillnet harvests, subsistence landings, and Alaska Department of Fish and Game variable mesh gillnet and chartered purse seine vessel catches. Samples within each of the six areas were grouped by gear type, sampling week, and location. A total of 13,862 herring was sampled for age, sex, length, and weight information. In most areas sampled, the relative proportion of herring age 6 and above decreased as the spawning season progressed. Relative abundance trends for four year classes were similar in all areas. The 1978 and 1977 year classes (ages 5 and 6, respectively) were abundant (usually at least 70% of each total sample), while the 1976 and 1975 year classes (ages 7 and 8, respectively) were poorly represented (usually 8% or less of each total sample). The 1979 year class (age 4) was most abundant in Cape Romanzof and Norton Sound (21 and 33%, respectively, of variable mesh gillnet catches) and least abundant in Togiak (about 10% of variable mesh gillnet catches). Mean length within each year class progressively decreased in samples taken northward from Togiak, Bristol Bay, to Norton Sound Districts. Mean length at age did not appear to be related to capture gear type. Generally, males tended to outnumber females in most total season samples by about 1.2:1.

KEY WORDS: Pacific herring, *Clupea harengus pallasi*, biological sampling (A-W-L).

INTRODUCTION

This report is part of a series which has been used to present age, sex, and size data for Pacific herring, *Clupea harengus pallasi*, sampled in eastern Bering Sea coastal waters (McBride et al. 1981; Fried et al. 1982a and b; 1983a and b).

METHODS

Study Area Description

The study area consisted of the coastal waters between Cape Constantine and Cape Douglas in the eastern Bering Sea (Figures 1 and 2). Herring samples within these areas were collected from Togiak, Security Cove, Goodnews Bay, Cape Romanzof, and Norton Sound commercial fishing districts and Nelson Island, the major subsistence fishing area. Total herring spawning biomass in eastern Bering Sea locations was estimated to be 180,800 metric tons (mt) and was distributed as follows: 70% in Togiak, 14% in Norton Sound, 8% in Nelson Island, 3% each in Security Cove and Cape Romanzof, and 2% in Goodnews Bay.

Sampling Techniques

Herring were sampled from commercial purse seine and gillnet harvests, subsistence landings, and Alaska Department of Fish and Game variable mesh gillnet and chartered purse seine vessel catches. All herring sampled were identified according to sex, measured (standard length, mm), and aged from scales. Attempts were made to weigh (g) as many herring as time permitted. Samples within all areas were grouped by weekly period, gear type, and location (section or subdistrict).

To determine the sample size necessary for comparisons, the following equation was used (Cochran 1977, p. 75, Eq. 4.2):

$$N = \frac{Z^2 r (1-r)}{\alpha^2}, \text{ where}$$

N = sample size,

α = tolerable absolute error,

r = fraction of the sample corresponding to the year class of interest, and

Z = upper $100 (1 - \alpha/2/k)$ % point of the standard normal distribution, where

α = probability of a Type I error, and

k = number of year classes in the sample

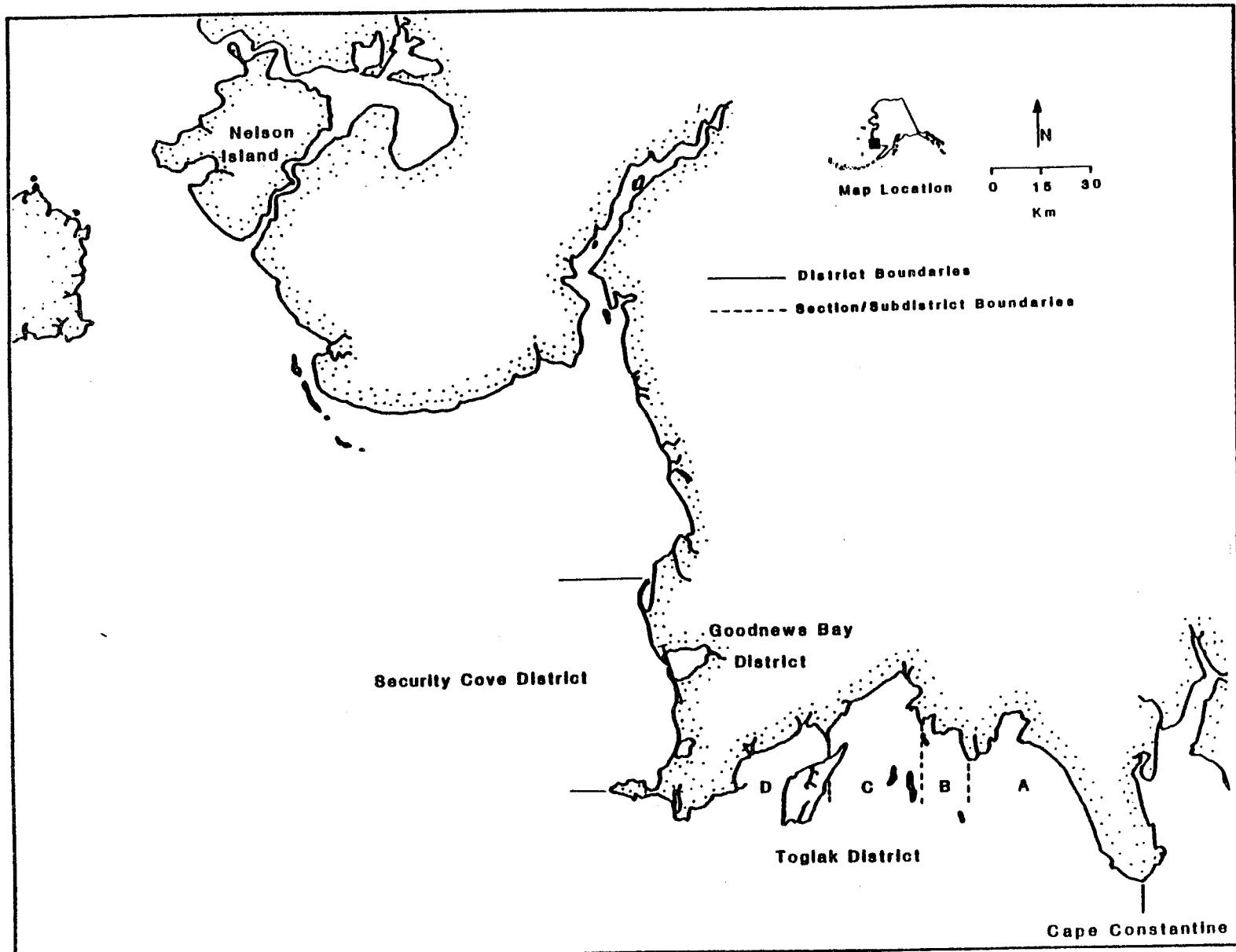


Figure 1. Togiak (A = Kulukak, B = Nunavachak, C = Togiak and D = Hagemeister Sections), Security Cove and Goodnews Bay Commercial Herring Fishing Districts and Nelson Island (restricted to subsistence fishing), Alaska.

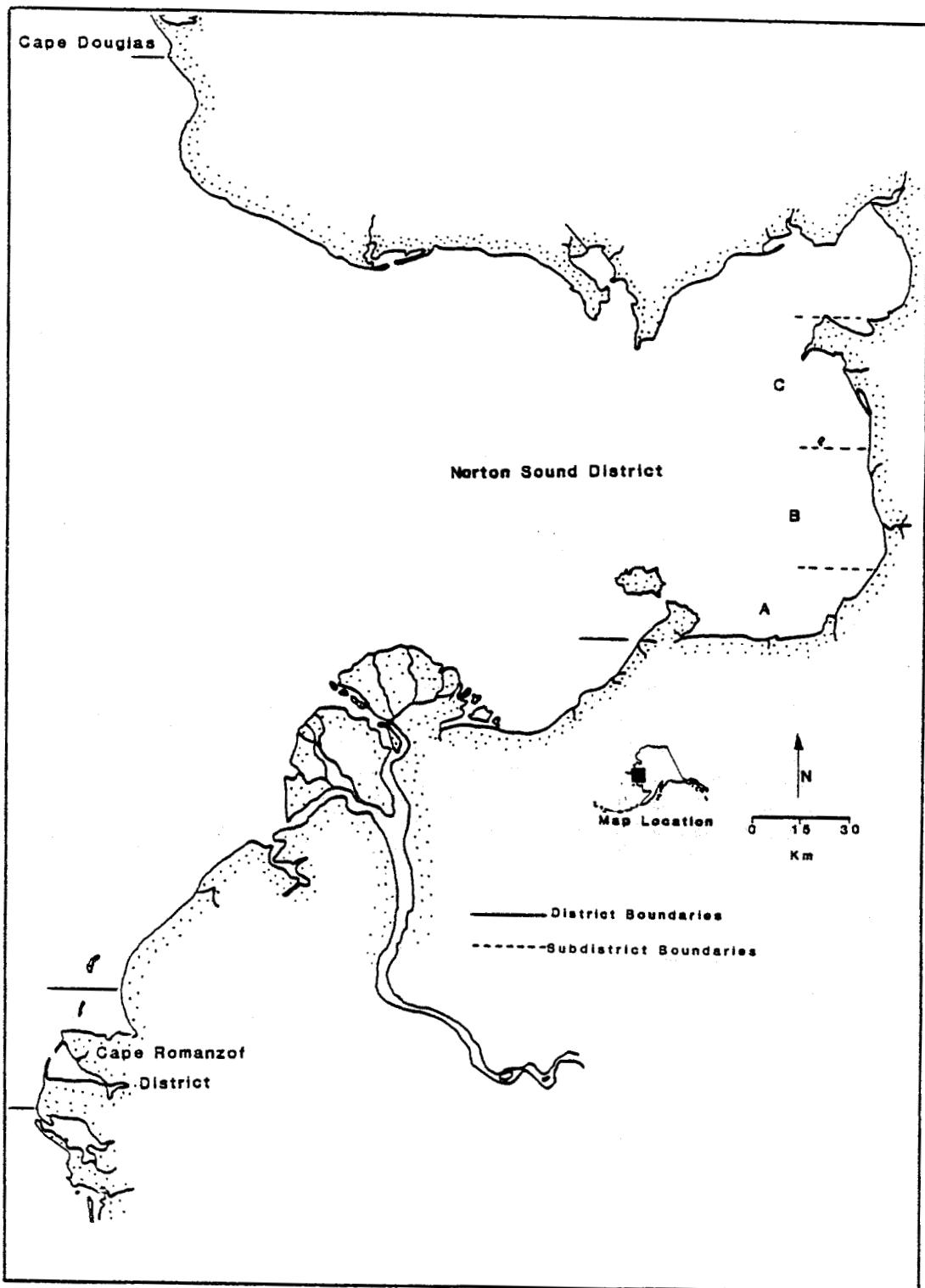


Figure 2. Cape Romanzof and Norton Sound (A = St. Michael, B = Unalakleet and C = Cape Denbigh Subdistricts) Commercial Herring Fishing Districts, Alaska.

Using $r = 0.5$, $a = 0.1$, $k = 7$, $\alpha = 0.05$, and $z = 2.69$, calculated sample size was 181. At this sampling level all seven year classes (ages 3, 4, 5, 6, 7, 8, and 9 years and older) would be within $\pm 10\%$ ($100 \times a$) of their true values in 95% [$100(1 - \alpha)$] of all samples taken. To account for herring with unreadable or missing scales (about 15% of all samples), sampling level was increased to 213 herring. The above equation for determining sampling levels is a corrected version of the one presented in Fried et al. (1982a).

RESULTS AND DISCUSSION

A total of 13,862 herring was examined during the period 22 April to 23 June 1983 (Tables 1-35). Trends in size and age data generally paralleled those noted in previous years (e.g., Fried et al. 1982a).

No obvious trends or consistent differences in age composition, sex ratio, or mean size at age were noted among sections in Togiak District or subdistricts in Norton Sound (Tables 1-19, 28-35, respectively). However, temporal differences in year class abundance were again evident within all areas. Older herring arrived and spawned earlier in the season than younger herring (e.g., Tables 19 and 35).

The 1977 year class (age 6) dominated catches in all areas for the third consecutive year, usually representing about 30% or more of the total season sample (Tables 5, 9, 13, 14, 19-27, 31, 35-37). The 1978 year class (age 5) was also abundant in most areas, usually representing about 25% of the total season sample. Both the 1976 and 1975 year classes (ages 7 and 8, respectively) were poorly represented in most areas, usually representing about 5% and 3%, respectively, of the total season sample. The 1979 year class (age 4) represented less than 10% of total season samples within Togiak District, but about 14% of season samples in all other areas.

Mean length within a year class did not appear to differ among samples taken by different gear types within the same district (e.g., Tables 5, 9, 13, and 19). However, mean length within all year classes decreased in samples taken progressively northward from Togiak to Norton Sound. Trends within and between areas for mean weight within each year class were similar but were not as clearly defined.

Males usually outnumbered females in most total season samples by a ratio of about 1.2:1.

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LITERATURE CITED

- Cochran, W.G. 1977. Sampling Techniques, 3rd ed. John Wiley and Sons, Inc. New York. 428 p.
- Fried, S.M., C. Whitmore, and D. Bergstrom. 1982a. Age, sex, and size composition of Pacific herring, *Clupea harengus pallasi*, from eastern Bering Sea coastal spawning sites, Alaska, 1981. ADF&G Technical Data Report No. 78. 40 p.
- _____. 1982b. Age, sex, and size composition of Pacific herring, *Clupea harengus pallasi*, from eastern Bering Sea coastal spawning sites, Alaska, 1982. ADF&G Technical Data Report No. 79. 32 p.
- _____. 1983a. Age, sex, and size composition of Pacific herring, *Clupea harengus pallasi*, from eastern Bering Sea coastal spawning sites, Alaska, 1964-1976. ADF&G Technical Data Report No. 84. 23 p.
- _____. 1983b. Age, sex, and size composition of Pacific herring, *Clupea harengus pallasi*, from eastern Bering Sea coastal spawning sites, Alaska, 1977-1978. ADF&G Technical Data Report No. 85. 32 p.
- McBride, D., C. Whitmore, and D. Bergstrom. 1981. Age, sex, and size composition of Pacific herring, *Clupea harengus pallasi* (Valenciennes) from selected coastal spawning sites along the eastern Bering Sea, 1979-1980. ADF&G Technical Data Report No. 61. 57 p.

Table 1. Age, sex, and size data for Pacific herring captured by commercial purse seines in Kulukak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29 - 5/5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	10	6	-	16	33.3	231	30.6	16	253	7.6	16
	6	12	12	-	24	50.0	283	33.9	24	267	7.5	24
	7	-	2	-	2	4.2	304	39.6	2	280	9.2	2
	8	1	1	-	2	4.2	330	92.6	2	282	7.1	2
	9+	1	3	-	4	8.3	381	38.0	4	296	10.1	4
	Period total	24	24	-	48	100.0	277	54.6	48	266	14.5	48
5/6 - 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	2	-	2	4.0	183	-	1	244	2.8	2
	5	15	10	-	25	50.0	237	24.8	25	259	8.1	25
	6	6	13	-	19	38.0	273	22.3	19	268	6.5	19
	7	-	1	-	1	2.0	303	-	1	280	-	1
	8	1	-	-	1	2.0	373	-	1	300	-	1
	9+	1	1	-	2	4.0	365	4.2	2	304	8.5	2
	Period total	23	27	-	50	100.0	259	41.6	49	265	13.6	50
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	2	-	2	2.0	183	-	1	244	2.8	2
	5	25	16	-	41	41.8	235	27.0	41	256	8.2	41
	6	18	25	-	43	43.9	279	29.4	43	268	7.0	43
	7	-	3	-	3	3.1	304	28.0	3	280	6.5	3
	8	2	1	-	3	3.1	345	69.9	3	288	11.5	3
	9+	2	4	-	6	6.1	376	30.7	6	299	9.6	6
	Total	47	51	-	98	100.0	268	49.0	97	265	14.0	98

Table 2. Age, sex, and size data for Pacific herring captured by commercial purse seines in Nunavachak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	18	13	-	31	17.0	247	29.4	21	254	7.4	31
	6	49	50	-	99	54.4	291	25.9	69	270	6.3	99
	7	1	4	-	5	2.7	353	49.3	4	283	7.8	5
	8	2	4	-	6	3.3	391	34.6	4	291	4.9	6
	9+	23	18	-	41	22.5	386	35.2	31	295	8.2	41
	Period total	93	89	-	182	100.0	312	58.3	129	274	15.5	182
5/6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	1	-	1	2.4	204	-	1	248	-	1
	5	9	11	-	20	48.8	233	34.2	20	257	8.6	20
	6	8	11	-	19	46.3	295	32.3	19	274	6.9	19
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	-	-	1	2.4	299	-	1	276	-	1
	Period total	18	23	-	41	100.0	263	45.5	41	265	11.7	41
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	1	-	1	.4	204	-	1	248	-	1
	5	27	24	-	51	22.9	240	32.2	41	255	7.9	51
	6	57	61	-	118	52.9	291	27.3	88	270	6.5	118
	7	1	4	-	5	2.2	353	49.3	4	283	7.8	5
	8	2	4	-	6	2.7	391	34.6	4	291	4.9	6
	9+	24	18	-	42	18.8	384	37.9	32	294	8.6	42
	Total	111	112	-	223	100.0	300	59.2	170	272	15.2	223

Table 3. Age, sex, and size data for Pacific herring captured by commercial purse seines in Togiak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	2	-	2	.9	188	10.6	2	237	4.2	2
	5	32	48	-	80	35.4	240	29.7	70	254	7.7	80
	6	55	58	-	113	50.0	297	38.4	97	269	8.5	113
	7	4	3	-	7	3.1	325	71.7	6	274	13.2	7
	8	3	5	-	8	3.5	340	56.5	8	287	6.8	8
	9+	11	5	-	16	7.1	377	63.6	15	296	10.6	16
Period total		105	121	-	226	100.0	284	57.1	198	266	14.6	226
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	-	-	1	2.1	86	-	1	191	-	1
	4	1	-	-	1	2.1	210	-	1	248	-	1
	5	13	6	-	19	39.6	243	34.7	19	257	8.3	19
	6	11	14	-	25	52.1	291	28.1	25	271	5.6	25
	7	-	1	-	1	2.1	266	-	1	272	-	1
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	-	-	1	2.1	346	-	1	300	-	1
Period total		27	21	-	48	100.0	266	48.0	48	264	15.3	48
All periods	1	-	-	-	-	-	-	-	1	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	-	-	1	.4	86	-	1	191	-	1
	4	1	2	-	3	1.1	196	14.5	3	241	7.0	3
	5	45	54	-	99	36.1	240	30.6	89	255	7.9	99
	6	66	72	-	138	50.4	296	36.5	122	270	8.1	138
	7	4	4	-	8	2.9	316	69.2	7	273	12.3	8
	8	3	5	-	8	2.9	340	56.5	8	287	6.8	8
	9+	12	5	-	17	6.2	375	62.0	16	296	10.3	17
Total		132	142	-	274	100.0	281	55.8	246	266	14.7	274

Table 4. Age, sex, and size data for Pacific herring captured by commercial purse seines in Hagemeister Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	3	1	-	4	1.1	179	6.3	4	230	1.9	4
	5	36	38	-	74	20.4	238	33.7	74	254	7.3	74
	6	110	104	-	214	59.1	283	34.9	214	267	7.3	214
	7	3	5	-	8	2.2	345	32.1	8	280	6.8	8
	8	6	2	-	8	2.2	324	44.8	8	284	4.9	8
	9+	21	33	-	54	14.9	390	44.5	54	298	10.3	54
Period total		179	183	-	362	100.0	291	60.1	362	269	15.9	362
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	8	7	-	15	7.8	171	19.3	15	230	6.4	15
	5	45	38	-	83	43.0	224	26.1	83	250	7.5	83
	6	43	43	-	86	44.6	282	28.4	86	265	6.5	86
	7	1	2	-	3	1.6	330	18.6	3	275	9.5	3
	8	1	-	-	1	.5	316	-	1	286	-	1
	9+	2	3	-	5	2.6	365	56.5	5	289	4.9	5
Period total		100	93	-	193	100.0	252	49.5	193	257	13.8	193
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	11	8	-	19	3.4	173	17.6	19	230	5.7	19
	5	81	76	-	157	28.3	231	30.6	157	252	7.7	157
	6	153	147	-	300	54.1	283	33.1	300	266	7.1	300
	7	4	7	-	11	2.0	341	29.0	11	279	7.5	11
	8	7	2	-	9	1.6	323	42.0	9	284	4.6	9
	9+	23	36	-	59	10.6	388	45.6	59	297	10.2	59
Total		279	276	-	555	100.0	277	59.6	555	265	16.3	555

Table 5. Age, sex, and size data for Pacific herring captured by commercial purse seines in Kulukak, Nunavachak, Togiak, and Hagemeyer Sections, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	3	3	-	6	.7	182	8.3	6	233	4.1	6
	5	96	105	-	201	24.6	239	31.4	181	254	7.5	201
	6	226	224	-	450	55.0	288	34.8	404	268	7.5	450
	7	8	14	-	22	2.7	337	49.4	20	279	9.7	22
	8	12	12	-	24	2.9	343	54.0	22	287	6.2	24
	9+	56	59	-	115	14.1	387	44.6	104	296	9.6	115
	Period total	401	417	-	818	100.0	292	59.4	737	269	15.6	818
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	-	-	1	.3	86	-	1	191	-	1
	4	9	10	-	19	5.7	176	21.1	18	234	8.7	19
	5	82	65	-	147	44.3	230	28.9	147	253	8.7	147
	6	68	81	-	149	44.9	284	28.6	149	267	7.1	149
	7	1	4	-	5	1.5	312	30.9	5	275	7.3	5
	8	2	-	-	2	.6	344	40.3	2	293	9.9	2
	9+	5	4	-	9	2.7	355	45.6	9	292	10.1	9
	Period total	168	164	-	332	100.0	256	47.8	331	260	14.2	332
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	-	-	1	.1	86	-	1	191	-	1
	4	12	13	-	25	2.2	177	18.8	24	233	7.8	25
	5	178	170	-	348	30.3	235	30.6	328	254	8.0	348
	6	294	305	-	599	52.1	287	33.2	553	268	7.4	599
	7	9	18	-	27	2.3	332	46.9	25	278	9.3	27
	8	14	12	-	26	2.3	343	52.3	24	287	6.5	26
	9+	61	63	-	124	10.8	384	45.3	113	296	9.7	124
	Total	569	581	-	1150	100.0	281	58.4	1068	267	15.8	1150

Table 6. Age, sex, and size data for Pacific herring captured by commercial gillnets in Kulukak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	78	40	-	118	35.3	238	26.7	118	255	7.2	118
	6	99	80	-	179	53.6	283	29.3	179	267	8.1	179
	7	5	2	-	7	2.1	293	32.6	7	269	6.8	7
	8	4	2	-	6	1.8	364	26.1	6	287	10.1	6
	9+	11	13	-	24	7.2	384	58.1	24	293	11.8	24
	Period total	197	137	-	334	100.0	276	49.8	334	265	13.0	334
5/6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	23	18	-	41	46.6	231	29.7	41	254	8.7	41
	6	30	14	-	44	50.0	276	36.4	44	268	8.2	44
	7	1	-	-	1	1.1	284	-	1	266	-	1
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	2	-	-	2	2.3	312	37.5	2	290	6.4	2
	Period total	56	32	-	88	100.0	256	40.7	88	262	11.8	88
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	101	58	-	159	37.7	236	27.6	159	254	7.6	159
	6	129	94	-	223	52.8	281	30.9	223	267	8.1	223
	7	6	2	-	8	1.9	292	30.4	8	269	6.4	8
	8	4	2	-	6	1.4	364	26.1	6	287	10.1	6
	9+	13	13	-	26	6.2	378	59.5	26	292	11.4	26
	Total	253	169	-	422	100.0	272	48.7	422	264	12.8	422

Table 7. Age, sex, and size data for Pacific herring captured by commercial gillnets in Nunavachak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
4/29- 5/ 5	5	21	16	-	37	22.2	249	22.0	32	263	8.0	37
	6	52	33	-	85	50.9	289	30.4	71	275	6.9	85
	7	3	2	-	5	3.0	286	30.5	5	280	7.3	5
	8	6	1	-	7	4.2	354	52.9	7	292	13.2	7
	9+	18	15	-	33	19.8	372	29.1	29	303	7.2	33
	Period total	100	67	-	167	100.0	300	51.9	144	279	15.3	167
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
5/ 6- 5/12	5	25	18	-	43	57.3	224	26.5	43	256	7.9	43
	6	13	16	-	29	38.7	277	30.9	29	271	7.5	29
	7	1	-	-	1	1.3	320	-	1	288	-	1
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	1	-	2	2.7	339	69.3	2	292	11.3	2
	Period total	40	35	-	75	100.0	249	42.1	75	263	12.0	75
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
All periods	5	46	34	-	80	33.1	235	27.5	75	259	8.8	80
	6	65	49	-	114	47.1	285	30.9	100	274	7.3	114
	7	4	2	-	6	2.5	291	30.6	6	281	7.2	6
	8	6	1	-	7	2.9	354	52.9	7	292	13.2	7
	9+	19	16	-	35	14.5	370	31.9	31	302	7.6	35
	Total	140	102	-	242	100.0	282	54.4	219	274	16.1	242

Table 8. Age, sex, and size data for Pacific herring captured by commercial gillnets in Togiak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	1	-	1	.4	219	-	1	234	-	1
	5	77	42	-	119	42.8	240	27.9	97	256	7.9	118
	6	81	38	-	119	42.8	284	34.5	100	268	8.7	119
	7	6	-	-	6	2.2	293	50.6	6	276	8.2	6
	8	1	1	-	2	.7	374	-	1	280	17.0	2
	9+	15	16	-	31	11.2	375	56.0	28	297	11.8	31
Period total		180	98	-	278	100.0	277	55.2	233	266	15.2	277

Table 9. Age, sex, and size data for Pacific herring captured by commercial gillnets in Kulukak, Nunavachak, and Togiak Sections, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	1	-	1	.1	219	-	1	234	-	1
	5	176	98	-	274	35.2	240	26.7	247	257	8.1	273
	6	232	151	-	383	49.2	284	31.1	350	269	8.7	383
	7	14	4	-	18	2.3	291	36.9	18	275	8.4	18
	8	11	4	-	15	1.9	360	39.9	14	289	12.3	15
	9+	44	44	-	88	11.3	376	48.5	81	298	11.0	88
	Period total	477	302	-	779	100.0	281	52.8	711	268	15.3	778
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	48	36	-	84	51.5	227	28.1	84	255	8.4	84
	6	43	30	-	73	44.8	276	34.1	73	269	8.0	73
	7	2	-	-	2	1.2	302	25.5	2	277	15.6	2
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	3	1	-	4	2.5	326	48.0	4	291	7.5	4
	Period total	96	67	-	163	100.0	253	41.4	163	262	11.9	163
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	1	-	1	.1	219	-	1	234	-	1
	5	224	134	-	358	38.0	237	27.7	331	256	8.2	357
	6	275	181	-	456	48.4	283	31.7	423	269	8.6	456
	7	16	4	-	20	2.1	292	35.5	20	275	8.7	20
	8	11	4	-	15	1.6	360	39.9	14	289	12.3	15
	9+	47	45	-	92	9.8	374	49.4	85	297	10.9	92
	Total	573	369	-	942	100.0	276	52.1	874	267	15.0	941

Table 10. Age, sex, and size data for Pacific herring captured by test purse seines in Kulukak Section, Nushagak Peninsula, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
5/13 - 5/19	4	2	6	-	8	4.3	161	9.4	8	230	5.4	8
	5	39	41	-	80	43.2	194	25.2	80	250	9.2	80
	6	37	38	-	75	40.5	236	20.0	75	266	6.5	75
	7	2	-	-	2	1.1	273	2.8	2	278	3.5	2
	8	1	3	-	4	2.2	310	23.5	4	288	9.6	4
	9+	8	8	-	16	8.6	322	28.7	16	293	10.3	16
	Period total	89	96	-	185	100.0	224	46.6	185	261	16.6	185

Table 11. Age, sex, and size data for Pacific herring captured by test purse seines in Nunavachak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	4	3	-	7	11.5	300	85.0	7	263	5.5	7
	6	11	7	-	18	29.5	321	36.7	18	271	6.1	18
	7	1	1	-	2	3.3	325	7.8	2	266	5.7	2
	8	-	1	-	1	1.6	428	-	1	286	-	1
	9+	21	12	-	33	54.1	414	38.9	32	301	12.3	33
	Period total	37	24	-	61	100.0	370	66.3	60	287	18.9	61
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	3	2	-	5	3.8	164	14.3	5	238	6.9	5
	5	35	23	-	58	44.3	192	25.1	58	248	8.9	58
	6	41	22	-	63	48.1	231	26.0	63	264	9.5	63
	7	2	1	-	3	2.3	255	18.2	3	273	7.0	3
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	2	-	-	2	1.5	306	48.8	2	292	14.1	2
	Period total	83	48	-	131	100.0	213	35.4	131	256	13.3	131
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	3	2	-	5	2.6	164	14.3	5	238	6.9	5
	5	39	26	-	65	33.9	204	48.7	65	250	9.8	65
	6	52	29	-	81	42.2	251	47.2	81	265	9.4	81
	7	3	2	-	5	2.6	283	40.9	5	270	7.0	5
	8	-	1	-	1	.5	428	-	1	286	-	1
	9+	23	12	-	35	18.2	408	46.4	34	301	12.3	35
	Total	120	72	-	192	100.0	262	87.0	191	266	20.7	192

Table 12. Age, sex, and size data for Pacific herring captured by test purse seines in Togiak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/22- 4/28	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	5	12	-	17	9.7	240	30.1	17	254	5.8	17
	6	25	24	-	49	28.0	295	30.9	49	271	8.4	49
	7	3	7	-	10	5.7	340	28.3	10	281	6.4	10
	8	3	4	-	7	4.0	368	37.6	7	284	7.1	7
	9+	45	47	-	92	52.6	410	40.5	92	298	8.5	92
	Period total	81	94	-	175	100.0	355	72.3	175	284	17.3	175
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	1	-	2	1.3	179	9.2	2	238	2.8	2
	5	17	15	-	32	20.6	251	27.6	29	257	7.4	32
	6	31	39	-	70	45.2	300	32.7	59	269	6.4	70
	7	3	4	-	7	4.5	318	44.8	6	281	9.1	7
	8	5	5	-	10	6.5	379	29.9	10	286	6.7	10
	9+	17	17	-	34	21.9	411	58.3	33	297	10.1	34
	Period total	74	81	-	155	100.0	321	72.2	139	274	16.4	155
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	3	-	4	1.7	193	33.3	4	244	7.8	4
	5	28	41	-	69	29.4	237	34.3	69	256	11.2	69
	6	59	72	1	132	56.2	280	35.8	132	269	9.2	132
	7	2	3	-	5	2.1	312	74.7	5	230	12.3	5
	8	5	-	-	5	2.1	299	38.2	4	284	16.0	5
	9+	12	8	-	20	8.5	371	58.4	20	298	10.0	20
	Period total	107	127	1	235	100.0	274	53.5	234	268	15.4	235
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	5	10	-	15	8.0	165	18.5	15	233	5.0	15
	5	39	27	-	66	35.1	210	21.8	66	253	8.0	66
	6	47	39	-	86	45.7	252	32.1	86	268	8.1	86
	7	2	1	-	3	1.6	294	50.3	3	279	9.9	3
	8	3	1	-	4	2.1	305	27.1	4	293	9.6	4
	9+	8	6	-	14	7.4	329	34.0	14	298	7.2	14
	Period total	104	84	-	188	100.0	238	48.5	188	263	17.2	188
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	7	14	-	21	2.8	172	23.4	21	236	6.8	21
	5	89	95	-	184	24.4	229	32.7	181	255	9.3	184
	6	162	174	1	337	44.8	278	37.8	326	269	8.3	337
	7	10	15	-	25	3.3	323	47.0	24	280	8.4	25
	8	16	10	-	26	3.5	351	46.7	25	286	9.5	26
	9+	82	78	-	160	21.2	398	52.6	159	298	8.9	160
Total	366	386	1	753	100.0	293	75.4	736	272	18.4	753	

Table 13. Age, sex, and size data for Pacific herring captured by test purse seines in Kulukak, Nunavachak, and Togiak Sections, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
4/22- 4/28	5	5	12	-	17	9.7	240	30.1	17	254	5.8	17
	6	25	24	-	49	28.0	295	30.9	49	271	8.4	49
	7	3	7	-	10	5.7	340	28.3	10	281	6.4	10
	8	3	4	-	7	4.0	368	37.6	7	284	7.1	7
	9+	45	47	-	92	52.6	410	40.5	92	298	8.5	92
	Period total	81	94	-	175	100.0	355	72.3	175	284	17.3	175
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
4/29- 5/ 5	4	1	1	-	2	.9	179	9.2	2	238	2.8	2
	5	21	18	-	39	18.1	261	47.2	36	258	7.4	39
	6	42	46	-	88	40.7	305	34.6	77	270	6.4	88
	7	4	5	-	9	4.2	320	38.2	8	278	10.4	9
	8	5	6	-	11	5.1	384	32.0	11	286	6.4	11
	9+	38	29	-	67	31.0	413	49.4	65	299	11.3	67
	Period total	111	105	-	216	100.0	336	73.9	199	278	18.0	216
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
5/ 6~ 5/12	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	3	-	4	1.7	193	33.3	4	244	7.8	4
	5	28	41	-	69	29.4	237	34.3	69	256	11.2	69
	6	59	72	1	132	56.2	280	35.8	132	269	9.2	132
	7	2	3	-	5	2.1	312	74.7	5	280	12.3	5
	8	5	-	-	5	2.1	299	38.2	4	284	16.0	5
	9+	12	8	-	20	8.5	371	58.4	20	298	10.0	20
	Period total	107	127	1	235	100.0	274	53.5	234	268	15.4	235
	1	-	-	-	-	-	-	-	-	-	-	-
5/13- 5/19	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	10	18	-	28	5.6	164	15.3	28	233	6.0	28
	5	113	91	-	204	40.5	198	25.2	204	250	8.9	204
	6	125	99	-	224	44.4	241	28.2	224	266	8.2	224
	7	6	2	-	8	1.6	274	33.8	8	277	7.2	8
	8	4	4	-	8	1.6	307	23.6	8	290	9.3	8
	9+	18	14	-	32	6.3	324	31.5	32	295	9.3	32
	Period total	276	228	-	504	100.0	226	45.7	504	260	16.2	504
	1	-	-	-	-	-	-	-	-	-	-	-
All periods	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	12	22	-	34	3.0	168	19.9	34	235	7.0	34
	5	167	162	-	329	29.1	216	38.3	326	253	9.6	329
	6	251	241	1	493	43.6	267	40.9	482	268	8.4	493
	7	15	17	-	32	2.8	313	47.4	31	279	8.6	32
	8	17	14	-	31	2.7	348	47.9	30	286	9.2	31
	9+	113	98	-	211	18.7	394	54.2	209	298	9.7	211
	Total	575	554	1	1130	100.0	276	78.1	1112	269	19.0	1130

Table 14. Age, sex, and size data for Pacific herring captured by test commercial gillnets in Kulukak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	-	-	1	2.6	172	-	1	235	-	1
	5	5	3	-	8	20.5	241	33.5	8	255	7.9	8
	6	19	7	-	26	66.7	292	39.8	26	269	9.4	26
	7	1	-	-	1	2.6	365	-	1	282	-	1
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	2	-	3	7.7	412	39.3	3	299	5.3	3
Period total		27	12	-	39	100.0	290	59.4	39	268	14.8	39
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	1	-	1	.9	135	-	1	208	-	1
	4	2	-	-	2	1.7	171	24.0	2	233	5.7	2
	5	19	26	-	45	39.1	232	22.7	45	253	6.8	45
	6	21	29	-	50	43.5	273	30.6	50	267	8.0	50
	7	-	1	-	1	.9	281	-	1	279	-	1
	8	-	2	-	2	1.7	343	70.7	2	277	5.7	2
	9+	6	8	-	14	12.2	338	29.4	14	292	6.5	14
Period total		48	67	-	115	100.0	263	47.6	115	264	15.5	115
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	4	7	-	11	55.0	228	30.1	11	253	10.0	11
	6	5	2	-	7	35.0	261	31.9	7	272	8.4	7
	7	1	-	-	1	5.0	263	-	1	270	-	1
	8	1	-	-	1	5.0	290	-	1	282	-	1
	9+	-	-	-	-	-	-	-	-	-	-	-
Period total		11	9	-	20	100.0	244	34.5	20	262	13.3	20
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	1	-	1	.6	135	-	1	208	-	1
	4	3	-	-	3	1.7	171	17.0	3	234	4.2	3
	5	28	36	-	64	36.8	232	25.3	64	254	7.4	64
	6	45	38	-	83	47.7	278	35.0	83	268	8.5	83
	7	2	1	-	3	1.7	303	54.4	3	277	6.2	3
	8	1	2	-	3	1.7	325	58.6	3	279	4.9	3
	9+	7	10	-	17	9.8	351	41.6	17	293	6.8	17
Total		86	88	-	174	100.0	267	50.9	174	264	15.1	174

Table 15. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Kulukak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/22- 4/28	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	6	11	-	17	21.2	232	24.4	16	255	9.0	16
	6	20	16	-	36	45.0	284	24.7	36	270	6.3	36
	7	1	-	-	1	1.2	289	-	1	276	-	1
	8	3	-	-	3	3.7	314	37.5	3	285	9.5	3
	9+	9	14	-	23	28.7	393	43.7	23	296	14.2	23
	Period total	39	41	-	80	100.0	306	67.4	79	275	17.8	79
4/29- 5/5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	1	-	1	1.1	183	-	1	247	-	1
	5	9	4	-	13	14.6	226	23.0	13	253	9.1	13
	6	21	8	-	29	32.6	283	32.3	29	270	7.1	29
	7	1	2	-	3	3.4	300	49.0	3	270	8.2	3
	8	5	2	-	7	7.9	415	25.5	7	299	6.1	7
	9+	26	10	-	36	40.4	400	41.0	36	298	9.1	36
	Period total	62	27	-	89	100.0	332	79.5	89	281	19.7	89
5/6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	6	2	-	8	4.9	176	18.4	8	236	7.3	8
	5	37	32	-	69	42.3	234	33.5	69	253	10.4	69
	6	24	44	-	68	41.7	285	41.7	68	267	8.2	68
	7	1	1	-	2	1.2	330	28.3	2	282	2.1	2
	8	4	1	-	5	3.1	325	46.4	5	286	3.3	5
	9+	9	2	-	11	6.7	387	34.8	11	295	5.9	11
	Period total	81	82	-	163	100.0	267	58.9	163	262	15.7	163
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	-	-	1	.5	89	-	1	192	-	1
	4	8	6	-	14	6.7	147	17.4	14	224	6.5	14
	5	56	43	-	99	47.4	211	30.8	99	251	9.6	99
	6	40	41	-	81	38.8	257	31.5	81	267	8.3	81
	7	1	3	-	4	1.9	294	42.9	4	275	7.7	4
	8	1	-	-	1	.5	350	-	1	287	-	1
	9+	5	4	-	9	4.3	351	41.0	9	294	6.0	9
	Period total	112	97	-	209	100.0	233	52.2	209	258	17.1	209
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	4	-	4	1.5	109	17.7	4	204	8.6	4
	4	21	12	-	33	12.7	156	25.8	33	230	10.1	33
	5	64	68	-	132	51.0	201	25.7	132	249	9.6	132
	6	46	38	-	84	32.4	242	29.9	84	264	9.7	84
	7	3	-	-	3	1.2	291	6.4	3	277	4.4	3
	8	1	-	-	1	.4	322	-	1	285	-	1
	9+	1	1	-	2	.8	346	46.0	2	297	4.2	2
	Period total	136	123	-	259	100.0	210	43.5	259	252	16.4	259
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	4	-	5	.6	105	17.7	5	202	9.2	5
	4	35	21	-	56	7.0	157	24.4	56	230	9.7	56
	5	172	158	-	330	41.2	214	31.6	329	251	9.9	329
	6	151	147	-	298	37.2	265	37.6	298	267	8.5	298
	7	7	6	-	13	1.6	300	33.6	13	275	6.8	13
	8	14	3	-	17	2.1	361	56.2	17	291	8.6	17
	9+	50	31	-	81	10.1	389	43.2	81	297	10.1	81
	Total	430	370	-	800	100.0	251	69.9	799	261	19.6	799

Table 16. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Nunavachak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	6	3	-	9	16.4	259	31.0	9	258	6.5	9
	6	8	10	-	18	32.7	295	44.0	18	268	7.2	18
	7	-	1	-	1	1.8	302	-	1	270	-	1
	8	1	3	-	4	7.3	409	27.9	4	290	5.0	4
	9+	12	11	-	23	41.8	397	34.1	23	294	9.2	23
	Period total	27	28	-	55	100.0	340	69.3	55	279	16.7	55
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	19	18	-	37	32.7	238	29.4	37	257	6.9	37
	6	31	25	-	56	49.6	279	37.9	56	271	9.6	56
	7	2	-	-	2	1.8	306	53.0	2	285	7.1	2
	8	3	1	-	4	3.5	343	9.7	4	289	5.9	4
	9+	7	7	-	14	12.4	365	55.5	14	298	9.6	14
	Period total	62	51	-	113	100.0	279	54.9	113	271	15.7	113
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	9	9	-	18	10.3	151	25.2	18	228	10.6	18
	5	54	30	-	84	48.0	210	32.0	84	252	10.0	84
	6	33	26	-	59	33.7	258	32.1	59	268	7.7	59
	7	1	2	-	3	1.7	310	49.6	3	274	7.2	3
	8	4	-	-	4	2.3	334	43.9	4	286	8.7	4
	9+	4	3	-	7	4.0	374	55.8	7	301	11.8	7
	Period total	105	70	-	175	100.0	231	58.0	175	258	18.0	175
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	6	9	-	15	16.1	171	28.6	15	229	8.6	15
	5	22	22	-	44	47.3	208	31.0	44	245	9.9	44
	6	20	12	1	33	35.5	252	27.0	33	259	6.4	33
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	-	-	1	1.1	314	-	1	273	-	1
	Period total	49	43	1	93	100.0	219	41.7	93	248	13.7	93
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	15	18	-	33	7.6	160	28.1	33	229	9.6	33
	5	101	73	-	174	39.9	218	34.4	174	251	10.2	174
	6	92	73	1	166	38.1	268	37.3	166	267	9.1	166
	7	3	3	-	6	1.4	308	39.4	6	277	8.5	6
	8	8	4	-	12	2.8	362	44.7	12	289	6.3	12
	9+	24	21	-	45	10.3	382	47.3	45	296	10.4	45
	Total	243	192	1	436	100.0	255	68.3	436	262	19.4	436

Table 17. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Togiak Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
4/22- 4/28	5	-	-	-	-	-	-	-	-	-	-	-
	6	2	2	-	4	36.4	309	18.7	4	277	5.1	4
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	5	2	-	7	63.6	394	25.1	7	301	8.7	7
Period total		7	4	-	11	100.0	363	48.3	11	292	14.1	11

Table 18. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Hagemeister Section, Togiak District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/22- 4/28	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	4	-	-	4	22.2	235	14.9	4	260	6.1	4
	6	2	6	-	8	44.4	254	53.7	8	260	17.0	8
	7	-	-	-	-	-	-	-	-	-	-	-
	8	1	2	-	3	16.7	373	41.3	3	292	4.0	3
	9+	2	1	-	3	16.7	400	35.6	3	299	11.8	3
Period total		9	9	-	18	100.0	294	78.8	18	272	20.8	18
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	12	5	-	17	13.0	227	24.2	17	251	4.7	17
	6	20	23	-	43	32.8	294	40.0	43	267	7.9	43
	7	2	2	-	4	3.1	354	30.0	4	281	8.7	4
	8	7	6	-	13	9.9	391	43.1	13	292	7.2	13
	9+	27	27	-	54	41.2	409	39.9	54	294	7.8	54
Period total		68	63	-	131	100.0	344	77.6	131	279	17.9	131
5/ 6~ 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	-	-	1	1.1	164	-	1	246	-	1
	5	15	7	-	22	24.7	209	28.9	22	254	10.5	22
	6	30	13	-	43	48.3	258	31.4	43	271	9.2	43
	7	4	2	-	6	6.7	272	25.1	6	276	9.3	6
	8	1	-	-	1	1.1	285	-	1	295	-	1
	9+	7	9	-	16	18.0	370	56.4	16	298	10.6	16
Period total		58	31	-	89	100.0	266	64.7	89	272	17.6	89
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	2	-	-	2	.8	142	2.8	2	219	.7	2
	4	13	18	-	31	12.4	152	15.8	31	226	6.3	31
	5	55	34	1	90	35.9	204	32.2	90	248	8.9	90
	6	57	50	-	107	42.6	264	43.1	107	265	8.6	107
	7	2	3	-	5	2.0	303	47.5	5	276	11.9	5
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	8	8	-	16	6.4	370	60.5	16	295	8.2	16
Period total		137	113	1	251	100.0	235	65.7	251	256	18.8	251
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	2	-	-	2	.6	52	4.9	2	157	1.4	2
	3	2	2	-	4	1.3	106	27.0	4	199	15.8	4
	4	33	43	-	76	24.0	153	22.2	76	226	7.8	75
	5	72	52	-	124	39.1	187	26.0	124	244	9.2	124
	6	43	47	-	90	28.4	244	30.1	90	264	8.1	90
	7	2	-	-	2	.6	230	19.1	2	265	0.0	2
	8	1	-	-	1	.3	304	-	1	292	-	1
	9+	5	13	-	18	5.7	330	31.3	18	290	7.4	18
Period total		160	157	-	317	100.0	202	55.7	317	247	21.4	316
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	2	-	-	2	.2	52	4.9	2	157	1.4	2
	3	4	2	-	6	.7	118	28.1	6	206	16.1	6
	4	47	61	-	108	13.4	153	20.4	108	226	7.5	107
	5	158	98	1	257	31.9	198	30.9	257	247	9.6	257
	6	152	139	-	291	36.1	261	40.8	291	266	9.0	291
	7	10	7	-	17	2.1	296	50.8	17	276	10.0	17
	8	10	8	-	18	2.2	377	49.7	18	292	6.2	18
	9+	49	58	-	107	13.3	384	53.1	107	294	8.6	107
Total		432	373	1	806	100.0	244	81.2	806	258	23.0	805

Table 19. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Kulukak, Nunavachak, Togiak, and Hagemeister Sections, Togiak District, 1983.

Sample Period	Age (years)	Sex			Percent of Total	Weight			Std. Length			
		Male	Female	Unknown		Total	Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/22- 4/28	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	
	5	10	11	-	21	19.3	233	22.5	20	256	8.5	20
	6	24	24	-	48	44.0	281	33.2	48	269	9.6	48
	7	1	-	-	1	.9	289	-	1	276	-	1
	8	4	2	-	6	5.5	343	47.9	6	288	7.5	6
	9+	16	17	-	33	30.3	394	38.9	33	297	12.9	33
	Period total	55	54	-	109	100.0	310	69.7	108	276	18.6	108
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	-	1	-	1	.4	183	-	1	247	-	1
	5	27	12	-	39	14.2	234	28.5	39	253	7.3	39
	6	49	41	-	90	32.7	291	38.5	90	268	7.5	90
	7	3	5	-	8	2.9	327	43.5	8	276	9.5	8
	8	13	11	-	24	8.7	401	37.0	24	294	7.2	24
	9+	65	48	-	113	41.1	404	39.1	113	296	8.7	113
	Period total	157	118	-	275	100.0	339	76.5	275	280	18.2	275
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	7	2	-	9	2.5	175	17.7	9	237	7.7	9
	5	71	57	-	128	35.1	231	33.0	128	255	9.6	128
	6	85	82	-	167	45.8	276	39.3	167	269	9.1	167
	7	7	3	-	10	2.7	290	37.3	10	279	8.3	10
	8	8	2	-	10	2.7	328	36.0	10	288	5.0	10
	9+	23	18	-	41	11.2	373	50.7	41	297	9.1	41
	Period total	201	164	-	365	100.0	270	59.3	365	267	16.8	365
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	3	-	-	3	.5	124	30.7	3	210	15.9	3
	4	30	33	-	63	9.9	151	19.0	63	226	7.8	63
	5	165	107	1	273	43.0	209	31.7	273	250	9.6	273
	6	130	117	-	247	38.9	260	37.1	247	266	8.3	247
	7	4	8	-	12	1.9	302	42.6	12	275	8.8	12
	8	5	-	-	5	.8	337	38.7	5	286	7.5	5
	9+	17	15	-	32	5.0	366	53.8	32	296	8.8	32
	Period total	354	280	1	635	100.0	233	59.3	635	257	18.1	635
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	
	2	2	-	-	2	.3	52	4.9	2	157	1.4	2
	3	2	6	-	8	1.2	107	21.2	8	202	12.0	8
	4	60	64	-	124	18.5	156	24.6	124	228	8.7	123
	5	158	142	-	300	44.8	196	27.8	300	246	9.8	300
	6	109	97	1	207	30.9	244	29.6	207	264	8.7	207
	7	5	-	-	5	.7	267	34.6	5	272	7.3	5
	8	2	-	-	2	.3	313	12.7	2	288	4.9	2
	9+	7	14	-	21	3.1	331	31.3	21	290	8.2	21
	Period total	345	323	1	669	100.0	207	49.7	669	249	18.7	668
All periods	1	-	-	-	-	-	-	-	-	-	-	
	2	2	-	-	2	.1	52	4.9	2	157	1.4	2
	3	5	6	-	11	.5	112	23.8	11	204	13.0	11
	4	97	100	-	197	9.6	155	23.1	197	228	8.7	196
	5	431	329	1	761	37.1	209	33.0	760	250	10.1	760
	6	397	361	1	759	37.0	264	38.9	759	267	8.8	759
	7	20	16	-	36	1.8	299	42.5	36	276	8.5	36
	8	32	15	-	47	2.3	368	50.5	47	291	7.2	47
	9+	128	112	-	240	11.7	385	48.1	240	296	9.5	240
Total		1112	939	2	2053	100.0	250	74.6	2052	260	21.1	2051

Table 20. Age, sex, and size data for Pacific herring captured by commercial gillnets in Security Cove District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
5/ 6- 5/12	4	-	2	-	2	.7	176	2.8	2	238	.7	2
	5	27	31	-	58	19.9	224	25.3	58	253	7.5	58
	6	105	52	-	157	53.8	264	30.1	157	266	8.4	157
	7	14	18	-	32	11.0	283	33.4	32	271	10.0	32
	8	4	4	-	8	2.7	288	27.5	8	280	10.6	8
	9+	21	14	-	35	12.0	338	29.6	35	296	8.9	35
Period total		171	121	-	292	100.0	267	44.0	292	267	15.0	292

Table 21. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Security Cove District, 1983.

Sample Period	Age (years)	Sex			Percent of Total	Weight			Std. Length			
		Male	Female	Unknown		Total	Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	-	2	-	2	3.8	179	4.9	2	232	2.8	2
	5	5	6	-	11	21.2	226	17.2	11	252	4.5	11
	6	18	12	-	30	57.7	270	30.8	30	266	7.1	30
	7	2	4	-	6	11.5	299	28.7	6	275	3.1	6
	8	-	-	-	-	-	-	-	-	-	-	
	9+	-	3	-	3	5.8	440	83.2	3	305	13.3	3
	Period total	25	27	-	52	100.0	271	59.0	52	265	15.1	52
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	-	6	-	6	2.1	179	13.9	6	237	3.7	6
	5	41	30	-	71	24.5	217	27.4	71	250	8.9	71
	6	67	76	-	143	49.3	280	35.0	143	268	7.8	143
	7	13	16	-	29	10.0	294	28.9	29	271	6.8	29
	8	7	6	-	13	4.5	332	57.5	13	281	12.2	13
	9+	12	16	-	28	9.7	389	47.5	28	297	8.2	28
	Period total	140	150	-	290	100.0	277	60.8	290	266	15.9	290
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	2	-	2	.9	102	15.6	2	196	4.9	2
	4	21	18	-	39	18.1	152	29.8	39	227	9.5	39
	5	42	26	-	68	31.5	201	26.7	68	249	8.0	68
	6	42	41	-	83	38.4	251	34.8	83	265	7.9	83
	7	7	4	-	11	5.1	268	49.0	11	272	8.3	11
	8	1	2	-	3	1.4	307	3.1	3	282	10.1	3
	9+	5	5	-	10	4.6	333	37.2	10	293	10.9	10
	Period total	118	98	-	216	100.0	222	57.3	216	255	19.7	216
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	2	-	2	.8	132	8.5	2	217	0.0	2
	4	55	37	-	92	34.7	148	19.3	92	227	7.7	92
	5	34	47	-	81	30.6	190	32.7	81	245	9.3	81
	6	37	39	-	76	28.7	245	30.0	76	263	7.9	76
	7	3	2	-	5	1.9	244	25.4	5	268	5.9	5
	8	-	1	-	1	.4	302	-	1	285	-	1
	9+	4	4	-	8	3.0	323	30.3	8	291	8.6	8
	Period total	133	132	-	265	100.0	196	53.5	265	246	18.8	265
All periods	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	4	-	4	.5	117	20.1	4	207	12.2	4
	4	76	63	-	139	16.9	151	23.4	139	228	8.3	139
	5	122	109	-	231	28.1	203	31.0	231	248	8.9	231
	6	164	168	-	332	40.3	264	36.8	332	266	8.0	332
	7	25	26	-	51	6.2	284	37.2	51	271	6.8	51
	8	8	9	-	17	2.1	326	51.2	17	281	11.2	17
	9+	21	28	-	49	6.0	370	55.7	49	295	9.5	49
	Total	416	407	-	823	100.0	236	67.2	823	257	19.9	823

Table 22. Age, sex, and size data for Pacific herring captured by commercial gillnets in Goodnews Bay District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	6	1	-	7	2.8	175	8.1	7	238	3.8	7
	5	35	33	-	68	27.4	230	28.8	68	255	9.0	68
	6	73	66	-	139	56.0	266	29.3	139	267	8.0	139
	7	14	9	-	23	9.3	282	36.3	23	271	9.8	23
	8	3	1	-	4	1.6	310	40.2	4	286	14.1	4
	9+	2	5	-	7	2.8	369	19.6	7	295	7.5	7
Period total		133	115	-	248	100.0	259	41.7	248	265	12.5	248
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	20	28	-	48	17.8	163	19.3	47	231	8.8	47
	5	39	45	-	84	31.2	204	29.3	81	248	10.5	81
	6	69	53	-	122	45.4	253	33.7	122	261	8.4	122
	7	3	6	-	9	3.3	267	43.1	9	266	7.8	9
	8	1	3	-	4	1.5	335	16.2	4	287	9.9	4
	9+	1	1	-	2	.7	297	60.8	2	282	13.4	2
Period total		133	136	-	269	100.0	224	48.8	265	253	15.5	265
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	26	29	-	55	10.6	165	18.6	54	232	8.6	54
	5	74	78	-	152	29.4	216	32.0	149	251	10.5	149
	6	142	119	-	261	50.5	260	32.1	261	265	8.7	261
	7	17	15	-	32	6.2	278	38.3	32	270	9.5	32
	8	4	4	-	8	1.5	323	31.2	8	287	11.3	8
	9+	3	6	-	9	1.7	353	41.9	9	293	9.9	9
Total		266	251	-	517	100.0	241	48.7	513	258	15.3	513

Table 23. Age, sex, and size data for Pacific herring captured by subsistence gillnets in Goodnews Bay District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
	5	4	3	-	7	18.4	217	46.8	7	253	5.5	7
	6	24	4	-	28	73.7	272	35.1	28	266	9.9	28
	7	2	-	-	2	5.3	296	13.4	2	279	9.9	2
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	-	-	1	2.6	397	-	1	296	-	1
Period total		31	7	-	38	100.0	267	47.5	38	265	12.0	38
5/ 6~ 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	3	6	-	9	18.0	174	21.6	9	235	8.5	9
	5	10	10	-	20	40.0	208	22.7	20	248	6.4	20
	6	14	7	-	21	42.0	238	37.2	21	258	11.0	21
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	-	-	-	-	-	-	-	-	-	-	-
Period total		27	23	-	50	100.0	215	37.4	50	250	12.1	50
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	3	6	-	9	10.2	174	21.6	9	235	8.5	9
	5	14	13	-	27	30.7	211	29.9	27	249	6.5	27
	6	38	11	-	49	55.7	258	39.5	49	263	11.2	49
	7	2	-	-	2	2.3	296	13.4	2	279	9.9	2
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	-	-	1	1.1	397	-	1	296	-	1
Total		58	30	-	88	100.0	237	49.2	88	256	14.3	88

Table 24. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Goodnews Bay District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
4/29- 5/ 5	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	-	-	1	.6	169	-	1	229	-	1
	5	10	8	-	18	10.1	234	32.2	18	255	10.5	18
	6	64	50	-	114	64.0	284	34.8	114	268	8.6	114
	7	5	7	-	12	6.7	323	40.6	12	280	8.3	12
	8	2	2	-	4	2.2	376	34.9	4	293	10.8	4
	9+	13	16	-	29	16.3	373	37.8	29	296	10.1	29
	Period total	95	83	-	178	100.0	297	54.4	178	272	15.4	178
5/ 6- 5/12	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	10	15	-	25	12.0	167	21.0	25	229	7.2	25
	5	33	24	-	57	27.3	214	32.4	57	247	9.2	57
	6	48	46	-	94	45.0	275	37.6	94	265	9.4	94
	7	6	8	-	14	6.7	293	27.7	14	270	5.6	14
	8	3	1	-	4	1.9	346	69.5	4	288	7.8	4
	9+	8	7	-	15	7.2	375	49.6	15	293	8.0	15
	Period total	108	101	-	209	100.0	255	64.3	209	259	18.8	209
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	18	20	-	38	17.8	164	22.3	38	228	9.2	38
	5	31	26	-	57	26.6	209	28.5	57	250	9.2	57
	6	48	51	-	99	46.3	249	34.4	99	264	8.9	99
	7	3	5	-	8	3.7	275	35.6	8	273	6.8	8
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	7	5	-	12	5.6	353	46.6	12	295	8.7	12
	Period total	107	107	-	214	100.0	230	54.8	214	256	18.9	214
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	1	1	.3	34	-	1	142	-	1
	3	3	1	-	4	1.3	98	14.7	4	200	7.6	4
	4	57	48	-	105	33.2	156	26.5	105	227	8.5	105
	5	51	39	-	90	28.5	195	27.9	90	245	8.8	90
	6	55	53	-	108	34.2	257	34.9	108	262	9.2	108
	7	-	5	-	5	1.6	272	12.6	5	267	6.4	5
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	2	1	-	3	.9	349	18.5	3	290	5.6	3
	Period total	168	147	1	316	100.0	204	56.1	316	245	19.5	316
5/27- 6/ 2	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	3	1	-	4	1.8	100	8.3	4	199	8.2	4
	4	7	9	-	16	7.1	148	17.7	16	226	8.3	16
	5	10	26	-	36	15.9	192	32.9	36	248	9.3	36
	6	42	97	-	139	61.5	228	24.5	139	262	8.5	139
	7	2	9	-	11	4.9	243	21.9	11	268	6.5	11
	8	2	4	-	6	2.7	304	37.8	6	286	6.9	6
	9+	6	8	-	14	6.2	326	26.0	14	290	7.9	14
	Period total	72	154	-	226	100.0	223	48.3	226	259	17.9	226
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	1	1	.1	34	-	1	142	-	1
	3	6	2	-	8	.7	99	11.1	8	199	7.4	8
	4	93	92	-	185	16.2	158	24.7	185	227	8.4	185
	5	135	123	-	258	22.6	204	32.0	258	247	9.5	258
	6	257	297	-	554	48.5	257	38.9	554	264	9.1	554
	7	16	34	-	50	4.4	284	40.7	50	272	8.1	50
	8	7	7	-	14	1.2	337	54.1	14	289	8.4	14
	9+	36	37	-	73	6.4	360	43.0	73	294	9.0	73
	Total	550	592	1	1143	100.0	237	63.8	1143	256	20.4	1143

Table 25. Age, sex, and size data for Pacific herring captured by subsistence gillnets in Nelson Island area, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-
5/13- 5/19	5	17	7	-	24	10.5	-	-	-	250	9.0	22
	6	131	49	-	180	78.9	-	-	-	258	7.0	163
	7	8	6	-	14	6.1	-	-	-	268	6.4	13
	8	3	1	-	4	1.8	-	-	-	277	18.0	4
	9+	4	2	-	6	2.6	-	-	-	292	10.1	6
	Period total	163	65	-	228	100.0	-	-	-	259	10.5	208

Table 26. Age, sex, and size data for Pacific herring captured by commercial gillnets in Cape Romanzof District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	19	25	-	44	11.8	196	42.6	4	231	9.0	44
	5	61	61	-	122	32.7	222	36.4	22	246	9.4	122
	6	97	83	-	180	48.3	234	35.8	26	256	9.7	180
	7	11	11	-	22	5.9	242	27.2	4	267	7.1	22
	8	1	-	-	1	.3	-	-	-	272	-	1
	9+	3	1	-	4	1.1	-	-	-	286	12.5	4
Period total		192	181	-	373	100.0	227	36.7	56	251	13.5	373
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	50	50	-	100	18.5	180	-	1	226	9.2	100
	5	92	58	-	150	27.8	-	-	-	243	10.3	150
	6	117	115	-	232	43.0	-	-	-	254	10.2	232
	7	22	17	-	39	7.2	-	-	-	262	9.5	39
	8	2	1	-	3	.6	-	-	-	277	11.5	3
	9+	10	6	-	16	3.0	-	-	-	288	9.8	16
Period total		293	247	-	540	100.0	180	-	1	247	16.7	540
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	69	75	-	144	15.8	193	37.5	5	227	9.4	144
	5	153	119	-	272	29.8	222	36.4	22	245	10.0	272
	6	214	198	-	412	45.1	234	35.8	26	255	10.0	412
	7	33	28	-	61	6.7	242	27.2	4	264	8.9	61
	8	3	1	-	4	.4	-	-	-	276	9.8	4
	9+	13	7	-	20	2.2	-	-	-	287	10.1	20
Total		485	428	-	913	100.0	226	36.9	57	249	15.6	913

Table 27. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Cape Romanzof District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	1	-	2	.7	113	16.3	2	203	2.1	2
	4	17	14	-	31	10.7	164	35.1	31	224	9.3	31
	5	41	28	-	69	23.8	204	32.6	69	241	10.3	69
	6	77	55	-	132	45.5	246	36.0	132	257	11.0	132
	7	10	16	-	26	9.0	291	41.7	26	269	9.9	26
	8	3	-	-	3	1.0	314	15.8	3	275	9.2	3
	9+	14	13	-	27	9.3	368	44.4	27	289	10.7	27
	Period total	163	127	-	290	100.0	243	64.6	290	254	20.0	290
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	41	42	-	83	23.2	149	24.7	82	220	9.9	83
	5	53	42	-	95	26.6	199	32.1	93	238	10.7	95
	6	71	76	-	147	41.2	231	32.6	140	249	11.2	146
	7	4	7	-	11	3.1	300	56.6	9	261	12.8	11
	8	1	7	-	8	2.2	349	39.2	7	280	10.5	8
	9+	8	5	-	13	3.6	370	31.1	10	287	9.4	13
	Period total	178	179	-	357	100.0	211	58.9	341	242	19.2	356
5/27- 6/ 2	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	2	1	-	3	1.6	86	9.6	3	194	2.3	3
	4	34	28	-	62	34.1	142	20.4	62	221	8.1	62
	5	31	14	-	45	24.7	188	31.4	45	240	8.1	45
	6	24	27	-	51	28.0	229	32.8	51	251	8.5	51
	7	3	4	-	7	3.8	244	55.9	7	259	12.6	7
	8	1	-	-	1	.5	309	-	1	272	-	1
	9+	7	6	-	13	7.1	324	56.6	13	280	12.3	13
	Period total	102	80	-	182	100.0	195	62.0	182	240	20.0	182
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	3	2	-	5	.6	97	18.6	5	198	5.4	5
	4	92	84	-	176	21.2	149	26.4	175	221	9.3	176
	5	125	84	-	209	25.2	198	32.6	207	240	10.1	209
	6	172	158	-	330	39.8	237	34.8	323	252	11.4	329
	7	17	27	-	44	5.3	285	50.1	42	266	11.7	44
	8	5	7	-	12	1.4	336	36.3	11	278	9.8	12
	9+	29	24	-	53	6.4	357	48.9	50	286	11.1	53
	Total	443	386	-	829	100.0	219	64.4	813	245	20.5	828

Table 28. Age, sex, and size data for Pacific herring captured by commercial gillnets in St. Michael Subdistrict, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	2	3	-	5	2.6	162	17.8	5	229	7.2	5
	5	17	20	-	37	19.5	209	23.3	37	245	8.4	37
	6	41	61	-	102	53.7	240	27.6	102	254	8.7	99
	7	14	19	-	33	17.4	270	31.1	31	264	7.8	31
	8	2	4	-	6	3.2	264	35.8	6	270	7.9	6
	9+	3	4	-	7	3.7	321	40.3	7	276	8.4	7
Period total		79	111	-	190	100.0	241	39.2	188	254	12.1	185

Table 29. Age, sex, and size data for Pacific herring captured by commercial gillnets in Unalakleet Subdistrict, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	1	-	2	7.7	156	18.4	2	224	5.7	2
	5	4	1	-	5	19.2	183	21.2	5	231	8.0	5
	6	11	8	-	19	73.1	209	28.3	19	241	8.8	19
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	-	-	-	-	-	-	-	-	-	-	-
	Period total	16	10	-	26	100.0	200	30.5	26	238	10.1	26
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	13	9	-	22	6.1	162	27.9	22	225	8.2	22
	5	51	36	-	87	24.2	201	29.3	87	241	9.3	86
	6	94	79	-	173	48.2	238	32.5	173	251	10.0	170
	7	29	24	-	53	14.8	267	32.9	53	260	9.0	53
	8	3	1	-	4	1.1	289	31.8	4	272	5.3	4
	9+	13	7	-	20	5.6	322	44.5	20	275	11.1	20
	Period total	203	156	-	359	100.0	234	47.4	359	250	14.3	355
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	14	10	-	24	6.2	161	27.0	24	225	7.9	24
	5	55	37	-	92	23.9	200	29.1	92	240	9.5	91
	6	105	87	-	192	49.9	235	33.2	192	250	10.3	189
	7	29	24	-	53	13.8	267	32.9	53	260	9.0	53
	8	3	1	-	4	1.0	289	31.8	4	272	5.3	4
	9+	13	7	-	20	5.2	322	44.5	20	275	11.1	20
	Total	219	166	-	385	100.0	231	47.2	385	249	14.4	381

Table 30. Age, sex, and size data for Pacific herring captured by commercial gillnets in Cape Denbigh Subdistrict, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	9	4	-	13	3.1	159	16.8	13	225	8.7	13
	5	51	40	-	91	21.7	214	25.8	91	247	8.7	91
	6	114	121	-	235	56.1	246	27.7	234	257	8.8	235
	7	27	21	-	48	11.5	277	32.6	48	266	9.8	48
	8	4	3	-	7	1.7	286	26.0	7	268	9.7	7
	9+	15	10	-	25	6.0	344	38.9	25	281	8.1	25
Period total		220	199	-	419	100.0	246	44.5	418	256	13.3	419

Table 31. Age, sex, and size data for Pacific herring captured by commercial gillnets in St. Michael, Unalakleet, and Cape Denbigh Subdistricts, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	1	1	-	2	7.7	156	18.4	2	224	5.7	2
	5	4	1	-	5	19.2	183	21.2	5	231	8.0	5
	6	11	8	-	19	73.1	209	28.3	19	241	8.8	19
	7	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	-	-	-	-	-	-	-	-	-	-	-
Period total		16	10	-	26	100.0	200	30.5	26	238	10.1	26
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	24	16	-	40	4.1	161	23.2	40	226	8.1	40
	5	119	96	-	215	22.2	208	27.4	215	244	9.2	214
	6	249	261	-	510	52.7	242	29.6	509	254	9.6	504
	7	70	64	-	134	13.8	272	32.5	132	263	9.3	132
	8	9	8	-	17	1.8	279	31.2	17	270	7.9	17
	9+	31	21	-	52	5.4	333	42.1	52	278	9.7	52
Period total		502	466	-	968	100.0	241	45.0	965	254	13.8	959
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	25	17	-	42	4.2	161	22.9	42	226	8.0	42
	5	123	97	-	220	22.1	207	27.5	220	244	9.4	219
	6	260	269	-	529	53.2	241	30.2	528	254	9.8	523
	7	70	64	-	134	13.5	272	32.5	132	263	9.3	132
	8	9	8	-	17	1.7	279	31.2	17	270	7.9	17
	9+	31	21	-	52	5.2	333	42.1	52	278	9.7	52
Total		518	476	-	994	100.0	239	45.1	991	253	13.9	985

Table 32. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in St. Michael Subdistrict, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	4	6	-	10	7.9	173	20.3	10	230	7.6	10
	5	20	14	-	34	26.8	198	26.6	34	240	8.8	34
	6	34	28	-	62	48.8	236	34.0	62	251	9.5	62
	7	8	6	-	14	11.0	277	40.3	14	263	9.4	14
	8	1	-	-	1	.8	289	-	1	274	-	1
	9+	4	2	-	6	4.7	337	34.1	6	280	7.3	6
	Period total	71	56	-	127	100.0	231	48.6	127	249	14.1	127
5/27- 6/ 2	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	46	27	-	73	36.0	145	21.2	73	219	7.1	73
	5	43	18	-	61	30.0	180	21.3	61	234	9.3	61
	6	34	24	-	58	28.6	210	31.1	58	245	9.7	58
	7	3	5	-	8	3.9	248	46.7	8	256	12.1	8
	8	-	1	-	1	.5	339	-	1	275	-	1
	9+	2	-	-	2	1.0	320	2.8	2	272	3.5	2
	Period total	128	75	-	203	100.0	181	42.8	203	233	15.3	203
6/ 3- 6/ 9	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	34	27	-	61	32.8	141	15.4	61	219	7.1	61
	5	26	13	-	39	21.0	177	23.0	39	237	9.3	39
	6	31	37	-	68	36.6	200	23.0	68	246	9.8	68
	7	7	9	-	16	8.6	221	28.1	16	253	8.8	16
	8	1	1	-	2	1.1	247	43.1	2	259	7.8	2
	9+	-	-	-	-	-	-	-	-	-	-	-
	Period total	99	87	-	186	100.0	178	36.1	186	236	15.4	186
6/10- 6/16	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	1	-	2	.9	82	8.5	2	186	12.7	2
	4	66	68	-	134	62.9	135	15.2	134	217	6.7	134
	5	19	15	-	34	16.0	159	16.2	34	231	7.3	34
	6	21	15	-	36	16.9	189	22.9	36	244	10.6	36
	7	2	2	-	4	1.9	258	62.6	4	257	11.3	4
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	1	2	-	3	1.4	303	25.2	3	272	4.6	3
	Period total	110	103	-	213	100.0	152	36.8	213	225	15.4	213
6/17- 6/23	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	3	-	-	3	1.4	74	20.0	3	182	16.1	3
	4	41	36	-	77	37.2	129	12.6	77	218	7.1	77
	5	33	23	-	56	27.1	161	17.9	56	235	8.2	56
	6	32	33	-	65	31.4	188	23.6	65	246	8.8	65
	7	2	3	-	5	2.4	220	45.2	5	258	14.7	5
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	-	1	-	1	.5	267	-	1	283	-	1
	Period total	111	96	-	207	100.0	158	34.8	207	232	16.4	207
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	4	1	-	5	.5	77	15.4	5	184	13.2	5
	4	191	164	-	355	37.9	138	18.2	355	218	7.3	355
	5	141	83	-	224	23.9	174	24.8	224	236	9.0	224
	6	152	137	-	289	30.9	206	32.6	289	247	9.8	289
	7	22	25	-	47	5.0	245	45.5	47	258	10.7	47
	8	2	2	-	4	.4	281	50.1	4	267	9.8	4
	9+	7	5	-	12	1.3	320	33.8	12	277	6.8	12
	Total	519	417	-	936	100.0	176	46.5	936	234	17.0	936

Table 33. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Unalakleet Subdistrict, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Percent of Total	Weight			Std. Length			
		Male	Female	Unknown		Total	Mean (gm)	Std. Dev.	Number Weighted	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	14	6	-	20	10.1	174	24.2	20	230	11.2	20
	5	24	27	-	51	25.8	195	23.9	51	237	8.4	51
	6	61	53	-	114	57.6	219	40.5	114	243	12.9	113
	7	9	2	-	11	5.6	245	34.1	11	254	14.1	11
	8	1	-	-	1	.5	301	-	1	269	-	1
	9+	1	-	-	1	.5	329	-	1	277	-	1
	Period total	110	88	-	198	100.0	211	40.2	198	241	13.2	197
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	
	4	9	12	-	21	12.0	160	16.5	21	224	7.9	21
	5	26	19	-	45	25.7	196	27.0	45	237	9.2	45
	6	41	42	-	83	47.4	233	30.9	83	247	10.0	83
	7	10	11	-	21	12.0	284	43.4	21	261	9.5	21
	8	-	2	-	2	1.1	294	55.9	2	265	9.2	2
	9+	3	-	-	3	1.7	313	32.3	3	290	44.7	3
	Period total	89	86	-	175	100.0	223	47.5	175	244	15.8	175
5/27- 6/ 2	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	1	-	-	1	1.2	-	-	-	192	-	1
	4	20	12	-	32	39.0	-	-	-	219	8.8	32
	5	12	7	-	19	23.2	-	-	-	239	12.5	19
	6	18	9	-	27	32.9	-	-	-	242	9.7	27
	7	-	1	-	1	1.2	-	-	-	262	-	1
	8	-	-	-	-	-	-	-	-	-	-	
	9+	1	1	-	2	2.4	-	-	-	292	13.4	2
	Period total	52	30	-	82	100.0	-	-	-	233	18.0	82
6/ 3- 6/ 9	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	1	1	.5	26	-	1	128	-	1
	3	-	-	-	-	-	-	-	-	-	-	
	4	52	36	-	88	47.1	134	16.4	28	215	8.5	88
	5	16	14	-	30	16.0	184	19.8	11	235	13.1	30
	6	27	25	1	53	28.3	211	22.2	26	245	10.4	53
	7	6	5	-	11	5.9	237	32.4	8	263	12.7	11
	8	-	-	-	-	-	-	-	-	-	-	
	9+	3	1	-	4	2.1	285	10.8	3	279	10.7	4
	Period total	104	81	2	187	100.0	182	51.0	77	231	21.1	187
6/10- 6/16	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	
	3	1	-	-	1	3.3	57	-	1	163	-	1
	4	5	6	-	11	36.7	126	15.3	11	217	10.6	11
	5	3	2	-	5	16.7	146	17.9	5	226	9.5	5
	6	4	6	-	10	33.3	189	19.6	10	244	7.5	10
	7	-	2	-	2	6.7	237	4.9	2	268	2.1	2
	8	-	1	-	1	3.3	237	-	1	265	-	1
	9+	-	-	-	-	-	-	-	-	-	-	
	Period total	13	17	-	30	100.0	160	44.6	30	231	22.4	30
All periods	1	-	-	-	-	-	-	-	-	-	-	
	2	-	-	1	1	.1	26	-	1	128	-	1
	3	2	-	-	2	.3	57	-	1	177	20.5	2
	4	100	72	-	172	25.6	150	26.1	80	219	10.2	172
	5	81	69	-	150	22.3	192	26.5	112	237	10.4	150
	6	151	135	1	287	42.7	222	36.2	233	245	11.3	286
	7	25	21	-	46	6.8	262	42.9	42	260	11.6	46
	8	1	3	-	4	.6	282	44.0	4	266	5.6	4
	9+	8	2	-	10	1.5	303	26.9	7	285	23.4	10
	Total	368	302	2	672	100.0	207	48.5	480	238	18.3	671

Table 34. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in Cape Denbigh Subdistrict, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Total	Percent of Total	Weight			Std. Length		
		Male	Female	Unknown			Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	21	12	-	33	14.1	163	20.1	33	227	7.8	33
	5	37	25	-	62	26.5	202	23.4	62	242	8.2	62
	6	57	51	-	108	46.2	229	33.2	108	251	10.7	108
	7	12	9	-	21	9.0	277	47.3	21	264	13.8	21
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	4	6	-	10	4.3	341	35.4	10	281	9.6	10
	Period total	131	103	-	234	100.0	222	49.5	234	248	15.5	234
5/27- 6/ 2	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	16	19	-	35	15.4	157	17.5	35	226	7.5	35
	5	34	18	-	52	22.9	190	27.6	52	240	9.9	52
	6	60	52	-	112	49.3	209	30.9	112	249	8.7	112
	7	12	7	-	19	8.4	256	39.3	19	263	8.0	19
	8	1	-	-	1	.4	350	-	1	281	-	1
	9+	3	5	-	8	3.5	335	64.9	8	281	10.3	8
	Period total	126	101	-	227	100.0	205	47.7	227	246	15.0	227
6/ 3- 6/ 9	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-
	4	17	19	-	36	36.7	149	20.2	36	221	8.4	36
	5	3	7	-	10	10.2	179	27.4	10	233	11.3	10
	6	18	29	-	47	48.0	201	32.9	47	241	10.5	47
	7	4	1	-	5	5.1	234	23.4	5	259	6.5	5
	8	-	-	-	-	-	-	-	-	-	-	-
	9+	-	-	-	-	-	-	-	-	-	-	-
	Period total	42	56	-	98	100.0	182	38.3	98	234	14.4	98
6/10- 6/16	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	1	1	-	2	.9	87	19.8	2	188	11.3	2
	4	68	51	-	119	55.1	131	13.2	119	217	7.0	119
	5	15	14	-	29	13.4	175	22.2	29	236	9.2	29
	6	20	34	-	54	25.0	217	37.1	54	251	11.3	54
	7	3	4	-	7	3.2	267	36.9	7	267	8.0	7
	8	1	-	-	1	.5	308	-	1	277	-	1
	9+	1	3	-	4	1.9	328	51.4	4	287	7.6	4
	Period total	109	107	-	216	100.0	167	53.8	216	231	20.5	216
6/17- 6/23	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	10	1	-	11	5.4	73	6.4	11	184	6.4	11
	4	57	47	-	104	51.2	127	14.8	104	216	7.9	104
	5	16	7	-	23	11.3	168	25.2	23	236	8.6	23
	6	20	36	-	56	27.6	195	27.3	56	248	10.7	56
	7	3	1	-	4	2.0	239	16.6	4	267	7.6	4
	8	-	1	-	1	.5	265	-	1	278	-	1
	9+	1	3	-	4	2.0	308	43.2	4	278	5.7	4
	Period total	107	96	-	203	100.0	154	47.9	203	228	21.5	203
All periods	1	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-
	3	11	2	-	13	1.3	76	9.6	13	184	6.9	13
	4	179	148	-	327	33.4	138	20.5	327	219	8.6	327
	5	105	71	-	176	18.0	188	27.7	176	239	9.5	176
	6	175	202	-	377	38.5	213	34.3	377	249	10.6	377
	7	34	22	-	56	5.7	262	41.6	56	264	10.4	56
	8	2	1	-	3	.3	308	42.5	3	279	2.1	3
	9+	9	17	-	26	2.7	332	48.0	26	281	9.0	26
	Total	515	463	-	978	100.0	188	55.2	978	238	19.8	978

Table 35. Age, sex, and size data for Pacific herring captured by variable mesh gillnets in St. Michael, Unalakleet, and Cape Denbigh Sub-districts, Norton Sound District, 1983.

Sample Period	Age (years)	Sex			Percent of Total	Weight			Std. Length		
		Male	Female	Unknown		Mean (gm)	Std. Dev.	Number Weighed	Mean (mm)	Std. Dev.	Number Measured
5/13- 5/19	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-
	4	18	12	-	30	9.2	174	22.6	30	230	10.0
	5	44	41	-	85	26.2	196	24.9	85	238	8.7
	6	95	81	-	176	54.2	225	39.2	176	246	12.3
	7	17	8	-	25	7.7	263	40.2	25	259	12.3
	8	2	-	-	2	.6	295	8.5	2	271	3.5
	9+	5	2	-	7	2.2	336	31.3	7	279	6.7
	Period total	181	144	-	325	100.0	218	44.7	325	244	14.1
5/20- 5/26	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-
	4	30	24	-	54	13.2	162	18.7	54	226	8.0
	5	63	44	-	107	26.2	199	25.0	107	240	8.9
	6	98	93	-	191	46.7	230	32.2	191	249	10.6
	7	22	20	-	42	10.3	280	44.9	42	262	11.8
	8	-	2	-	2	.5	294	55.9	2	265	9.2
	9+	7	6	-	13	3.2	334	35.4	13	283	20.5
	Period total	220	189	-	409	100.0	222	48.6	409	246	15.7
5/27- 6/ 2	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-
	3	1	-	-	1	.2	-	-	192	-	1
	4	82	58	-	140	27.3	149	20.7	108	221	8.1
	5	89	43	-	132	25.8	185	24.7	113	237	10.3
	6	112	85	-	197	38.5	209	30.9	170	247	9.5
	7	15	13	-	28	5.5	254	40.9	27	261	9.5
	8	1	1	-	2	.4	344	7.8	2	278	4.2
	9+	6	6	-	12	2.3	332	57.6	10	281	11.1
	Period total	306	206	-	512	100.0	194	47.0	430	239	16.9
6/ 3- 6/ 9	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	1	1	.2	26	-	1	128	-
	3	-	-	-	-	-	-	-	-	-	-
	4	103	82	-	185	39.3	142	17.9	125	218	8.4
	5	45	34	-	79	16.8	178	23.0	60	236	11.1
	6	76	91	1	168	35.7	202	26.7	141	244	10.4
	7	17	15	-	32	6.8	228	28.7	29	257	10.7
	8	1	1	-	2	.4	247	43.1	2	259	7.8
	9+	3	1	-	4	.8	285	10.8	3	279	10.7
	Period total	245	224	2	471	100.0	180	40.2	361	234	17.9
6/10- 6/16	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	1	1	.2	26	-	1	128	-
	3	3	2	-	5	1.1	79	16.5	5	182	13.7
	4	139	125	-	264	57.5	132	14.5	264	217	7.0
	5	37	31	-	68	14.8	165	21.0	68	233	8.8
	6	45	55	-	100	21.8	204	33.8	100	248	11.2
	7	5	8	-	13	2.8	260	42.1	13	264	9.4
	8	1	1	-	2	.4	272	50.2	2	271	8.5
	9+	2	5	-	7	1.5	317	41.3	7	281	10.2
	Period total	232	227	-	459	100.0	159	46.5	459	228	18.6
6/17- 6/23	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-
	3	13	1	-	14	3.4	74	9.6	14	183	8.5
	4	98	83	-	181	44.1	128	13.9	181	217	7.6
	5	49	30	-	79	19.3	163	20.3	79	236	8.3
	6	52	69	-	121	29.5	191	25.5	121	247	9.7
	7	5	4	-	9	2.2	228	35.0	9	262	12.2
	8	-	1	-	1	.2	265	-	1	278	-
	9+	1	4	-	5	1.2	300	41.7	5	279	5.4
	Period total	218	192	-	410	100.0	156	41.8	410	230	19.2
All periods	1	-	-	-	-	-	-	-	-	-	-
	2	-	-	1	1	.0	26	-	1	128	-
	3	17	3	-	20	.8	75	11.6	19	183	9.6
	4	470	384	-	854	33.0	139	20.4	762	219	8.5
	5	327	223	-	550	21.3	183	27.3	512	237	9.7
	6	478	474	1	953	36.9	213	34.7	899	247	10.7
	7	81	68	-	149	5.8	257	43.7	145	261	11.1
	8	5	6	-	11	.4	288	43.0	11	270	8.4
	9+	24	24	-	48	1.9	324	42.4	45	281	12.9
	Total	1402	1182	2	2586	100.0	187	51.9	2394	236	18.5

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